LISTING OF CLAIMS

1-3. (Cancelled)

4. (Previously presented) A golf ball comprising a core, a barrier layer enveloping the core, and a cover enveloping the barrier layer, wherein the barrier layer has a moisture vapor transmission rate less than that of the cover, and the barrier layer comprises a thermoplastic or thermoset composition of microparticles dispersed in a binder comprising synthetic rubbers, natural rubbers, polyolefins, styrenic polymers, or single-site catalyzed polymers, and the microparticles comprise fibers; whiskers; metal flakes; micaceous particles; or nanoparticles.

5-6. (Cancelled)

7. (Previously presented) A golf ball comprising a core, a barrier layer enveloping the core, and a cover enveloping the barrier layer, wherein the barrier layer has a moisture vapor transmission rate less than that of the cover, and the barrier layer comprises a thermoplastic or thermoset composition of microparticles dispersed in a binder comprising synthetic rubbers, natural rubbers, polyolefins, styrenic polymers, or single-site catalyzed polymers, and the microparticles have a particle size of about 4 microns to about 335 microns.

8. (Previously presented) The golf ball of claim 4, wherein the microparticles are present in an amount of about 50 parts to about 250 parts per 100 parts by weight of the binder.

9. (Previously presented) The golf ball of claim 4, wherein the composition has a particle-to-binder weight ratio of about 1 to about 2.

10-15. (Cancelled)

16. (Previously presented) The golf ball of claim 4, wherein the barrier layer has a thickness of about 0.001 inches to about 0.01 inches.

17. (Previously presented) The golf ball of claim 4, wherein the barrier layer has a thickness of about 0.002 inches to about 0.007 inches.

18. (Previously presented) A golf ball comprising a core, a barrier layer enveloping the core, and a cover enveloping the barrier layer, wherein the barrier layer comprises a thermoplastic or thermoset composition of microparticles dispersed in a binder comprising synthetic rubbers, natural rubbers, polyolefins, styrenic polymers, or single-site catalyzed polymers, and the barrier layer has a moisture vapor transmission rate of less than about 0.95 grams·mm/(m^2·day) and less than that of the cover.

19. (Previously presented) The golf ball of claim 18, wherein the barrier layer has a moisture vapor transmission rate of less than about 0.65 grams·mm/(m^2·day).

20. (Previously presented) The golf ball of claim 4, wherein the barrier layer has a Sward hardness of about 5 to about 20.

21. (Previously presented) The golf ball of claim 4, wherein the barrier layer has a pencil hardness of about 5B to about F.

22-30. (Cancelled)

31. (Original) A golf ball comprising a core, a barrier layer enveloping the core, and a cover enveloping the barrier layer, wherein:

the barrier layer has a moisture vapor transmission rate less than that of the cover; and

the barrier layer comprises aluminum flakes comprising aluminum oxide.

32-33. (Cancelled)

34. (Previously presented) A golf ball comprising:

a core having a diameter of at least about 1.62 inches;

a barrier layer of less than about 0.02 inches thick enveloping the core, wherein the barrier layer comprises a thermoplastic or thermoset composition of microparticles dispersed in a binder; and

a cover of less than 0.03 inches thick enveloping the barrier layer, wherein the barrier layer has a moisture vapor transmission rate less than that of the cover.

35. (Original) The golf ball of claim 34, wherein the microparticles comprise aluminum flakes comprising aluminum oxide, and the binder comprises at least one styrenic polymer.

36. (Original) The golf ball of claim 34, wherein the composition further comprises a cross-linking agent, a catalyst, or a coupling agent.

37. (Original) The golf ball of claim 34, wherein the composition is dispersed in a non-aqueous solvent system comprising aromatic hydrocarbons, ketones, acetates, alcohols, or esters.

38. (Original) The golf ball of claim 34, wherein the composition has a particle-to-binder weight ratio of about 0.5 to about 2.5.

39. (Previously presented) The golf ball of claim 34, wherein the barrier layer has a moisture vapor transmission rate of less than about 0.95 grams·mm/(m^2·day).

40. (Previously presented) The golf ball of claim 34, wherein the thickness of the barrier layer is about 0.002 inches to about 0.007 inches.

41. (Previously presented) The golf ball of claim 34, wherein the core has:
a diameter of about 1.62 inches to about 1.64 inches;
a compression of less than about 100;
a deflection at 100 kg of greater than about 1.5 mm;
a coefficient of restitution of greater than about 0.78;
a specific gravity of less than about 1.4 g/cm^3; and
a peripheral hardness greater than a central hardness by about 5 Shore C.

42. (Previously presented) The golf ball of claim 34, wherein the core comprises:
a polybutadiene having a Mooney viscosity of greater than about 35;

a crosslinking agent in an amount of greater than about 15 parts per 100 parts by weight of the polybutadiene; and

an optional plasticizer.

43. (Previously presented) The golf ball of claim 34, wherein the core comprises:

a center having a diameter of about 0.5 inches to about 1.6 inches, a compression of about 50 to about 300, a deflection at 100 kg of greater than about 1.5 mm; and

an outer core layer enveloping the center.

44. (Original) The golf ball of claim 43, wherein the center comprises:

a polybutadiene having a Mooney viscosity of greater than about 35;

a crosslinking agent in an amount of about 15 part to about 40 parts per 100 parts by weight of the polybutadiene;

a regrind or filler; and

an optional plasticizer.

45. (Original) The golf ball of claim 43, wherein the outer core layer comprises:

a polybutadiene having a Mooney viscosity of greater than about 35;

a crosslinking agent in an amount of about 25 part to about 55 parts per 100 parts by weight of the polybutadiene;

a regrind, polyisoprene, or filler; and

an optional plasticizer, wherein the outer core layer has a material hardness of greater than about 60 Shore C.

46. (Previously presented) The golf ball of claim 34, wherein the cover has an outermost surface occupied by about 250 to about 450 dimples, and comprises:

a composition formed from a thermoplastic polyurethane, a thermoset polyurethane, a thermoplastic polyurea, or a thermoset polyurea; and

the composition having a material hardness of about 25 Shore D to about 65 Shore D and a flexural modulus of at least about 2,000 psi.

47. (Previously presented) The golf ball of claim 34, wherein the golf ball has:

a compression of less than about 110;

a coefficient of restitution greater than about 0.79;

a moment of inertia greater than about 84 $g \cdot cm^2$; and

a deflection at 100 kg of greater than about 1.5 mm.

48. (Previously presented) The golf ball of claim 4, wherein the binder comprises one or more of styrene-olefin block copolymers, poly(styrene-co-maleic anhydride)s, acrylonitrile-butylene-styrene copolymers, poly(styrene sulfonate)s, polystyrenes, styrene-butadiene copolymers, acrylics, grafted or non-grafted metallocene-catalyzed polyolefins, balata, polyethylenes, chlorinated polyethylenes, polypropylenes, polybutylenes, butyl-based rubbers, isoprene rubbers, trans polyisoprenes, neoprenes, ethylene-propylene rubbers, ethylene-butylene rubbers, or ethylene-propylene-(non-conjugated diene) terpolymers.

49. (Previously presented) The golf ball of claim 4, wherein the binder comprises at least one styrene-olefin block copolymer.

50. (Previously presented) The golf ball of claim 4, wherein the microparticles comprise leafing or non-leafing flakes of aluminum, iron oxide, copper, or bronze.

51. (Previously presented) The golf ball of claim 4, wherein the microparticles comprise leafing flakes of aluminum oxide.

52. (Previously presented) The golf ball of claim 4, wherein the composition further comprises one or more of polymeric polyahls, compatibilizers, coupling agents, cross-linking agents, polyolefin polyols, tertiary amines, or silanes.

53. (Previously presented) The golf ball of claim 52, wherein the composition comprises a polyolefin comprising at least one hydrogenated polybutadiene polyol.

54. (Previously presented) The golf ball of claim 52, wherein the composition comprises at least one coupling agent that bonds the barrier layer to the cover.

55. (Previously presented) The golf ball of claim 4, wherein the composition is dispersed in a non-aqueous solvent system comprising aromatic hydrocarbons, ketones, acetates, alcohols, or esters prior to forming the barrier layer.

56. (Previously presented) The golf ball of claim 55, wherein the solvent-borne dispersion has a solid content of at least about 30%.

57. (Previously presented) The golf ball of claim 55, wherein the solvent-borne dispersion has a viscosity of about 700 cps to about 900 cps.

58. (Previously presented) The golf ball of claim 4, wherein the barrier layer is formed by spraying and/or dipping.

59. (Previously presented) The golf ball of claim 7, wherein the microparticles comprises leafing metal flakes.

60-61. (Cancelled)

62. (Previously presented) The golf ball of claim 7, wherein the barrier layer has a thickness of about 0.001 inches to about 0.01 inches.

63. (Previously presented) The golf ball of claim 62, wherein the barrier layer has a thickness of about 0.002 inches to about 0.007 inches.

64. (Previously presented) The golf ball of claim 7, wherein the particle size is about 8 microns to about 50 microns.

65. (Cancelled)

66. (Previously presented) A golf ball comprising a core, a barrier layer enveloping the core, and a cover enveloping the barrier layer, wherein the barrier layer has a moisture vapor transmission rate less than that of the cover, and the barrier layer comprises a thermoplastic or thermoset composition

of microparticles dispersed in a binder comprising synthetic rubbers, natural rubbers, polyolefins, styrenic polymers, or single-site catalyzed polymers, wherein the barrier layer has a thickness of about 0.001 inches to 0.01 inches.

67. (Previously presented) The golf ball of claim 66, wherein the barrier layer has a thickness of about 0.002 inches to about 0.007 inches.

68. (Previously presented) A golf ball comprising a core, a barrier layer enveloping the core, and a cover enveloping the barrier layer, wherein the barrier layer has a moisture vapor transmission rate less than that of the cover, and the barrier layer comprises a thermoplastic or thermoset composition of microparticles dispersed in a binder comprising synthetic rubbers, natural rubbers, polyolefins, styrenic polymers, or single-site catalyzed polymers, and a difference in specific gravity between the core and the barrier layer is at least 0.1 g/cm^3.

69. (Previously presented) The golf ball of claim 68, wherein the barrier layer has a specific gravity of about 1.2 g/cm^3 to about 1.5 g/cm^3.

70. (Previously presented) The golf ball of claim 31, wherein the barrier layer further comprises a styrene-olefin block polymer, a polyolefin polyol, a tertiary amine, and a silane, and wherein the flakes are leafing flakes.

71. (New) The golf ball of claim 7, wherein the composition has a particle-to-binder ratio of about 0.5 to about 2.5.

72. (New) The golf ball of claim 31, wherein the composition has a particle-to-binder ratio of about 0.5 to about 2.5.

73. (New) The golf ball of claim 66, wherein the composition has a particle-to-binder ratio of about 0.5 to about 2.5.